resistance detector element for monitoring the lapping process, both of which are formed on a substrate, with illuminating light whose wavelength is [in] 300 nm or less[, preferably being in 200 nm];

forming an image by imaging light reflected [light] from said elements;

converting said image to an image signal through photoelectric conversion; and

detecting geometrical information of the abovementioned magnetoresistance effect element and the above-mentioned resistance detector element for monitoring the lapping process from said image signal.

- 2. (amended) Method [for] of measuring dimensions and alignment of [the] a thin film magnetic head according to claim 1, wherein the [above-mentioned] illuminating light includes a wavelength component of 248 nm.
- 3. (amended) Method [for] of measuring dimensions and alignment of [the] a thin film magnetic head according to claim 1, wherein the [above-mentioned] illuminating light includes a wavelength component of 266 nm.
- 4. (amended) Method [for] of measuring dimensions and alignment of [the] a thin film magnetic head according to claim 1, wherein the [above-mentioned] illuminating light includes a wavelength component of 213 nm.

- 5. (amended) Method [for] of measuring dimensions and alignment of [the] a thin film magnetic head according to claim 1, wherein the [above-mentioned] geometrical information includes dimensions of the element or alignment error of the element.
- 6. (amended) Method [for] of measuring dimensions and alignment of [the] a thin film magnetic head according to claim 1, wherein the [above-mentioned] magnetoresistance effect element and the [above-mentioned] resistance detector element for monitoring the lapping are covered with end face protection films.
- 7. (amended) Method [for] of measuring dimensions and alignment of a thin film magnetic head, including the steps of:

illuminating a thin film magnetic head formed on a substrate with illuminating light;

forming interference light by making <u>light</u> reflected [light] from [the above-mentioned] <u>said</u> substrate illuminated with said [illumination] <u>illuminating light</u> interfere with [the] reference light;

obtaining an image signal by picking up an image generated by said interference light [thus formed]; and

measuring dimensions and alignment of the [above-mentioned] thin film magnetic head <u>using said image</u> signal.

- 8. (amended) Method [for] measuring dimensions and alignment of [the] <u>a</u> thin film magnetic head according to claim 7, wherein the [above-mentioned] thin film magnetic head [pattern] includes a pattern of a magnetoresistance effect element and that of a resistance detector element for monitoring [the] <u>a</u> lapping <u>process</u>.
- 9. (amended) Method [for] of measuring dimensions and alignment of [the] a thin film magnetic head according to claim [7] 8, wherein measurement of dimensions and alignment of the [above-mentioned] thin film magnetic head is performed by detecting geometrical information of the [above-mentioned] magnetoresistance effect element and the [above-mentioned] resistance detector element for monitoring the lapping process from the [above-mentioned] image signal.
- 10. (amended) Method [for] of measuring dimensions and alignment of [the] a thin film magnetic head according to claim [7] 8, wherein the wavelength of the light for illuminating the [above-mentioned] magnetoresistance effect element and the [above-mentioned] resistance detector element for monitoring the lapping process, both of which are formed on the substrate, is [in the] 300 nm or less[, preferably being in 200 nm].
- 11. (amended) Apparatus for measuring dimensions and alignment of thin film magnetic head <u>during a lapping process</u>, comprising:

a light source emitting light whose wavelength is [in the] 300 nm or less[, preferably being in the 200 nm];

illuminating means for illuminating a magnetoresistance effect element and a resistance detector element for monitoring the lapping <u>process</u>, both of which are formed on a substrate, with <u>illuminating</u> light emitted from [the above-mentioned] <u>said</u> light source;

imaging means for [imaging] <u>obtaining</u> an optical image of [the above-mentioned] <u>said</u> substrate, illuminated [with the above-mentioned] <u>by said</u> illuminating means;

image [picking] <u>pick</u> up means for converting an optical image of [the above-mentioned] <u>said</u> substrate, which is imaged [with the above-mentioned] <u>by said</u> imaging means, to an image signal through photoconversion; and

geometrical information detecting means for detecting geometrical information of [the above-mentioned] said magnetoresistance effect element and [the above-mentioned] said resistance detector element for monitoring the lapping from [the] said image signal [of the above-mentioned substrate] that is obtained by [the above-mentioned] said image [picking] pick up means.

- 12. (amended) Apparatus for measuring dimensions and alignment of [the] <u>a</u> thin film magnetic head according to claim 11, wherein [the above-mentioned] <u>said</u> light source emits light [of] <u>having</u> a wavelength of 248 nm.
 - 13. (amended) Apparatus for measuring dimensions and

alignment of [the] <u>a</u> thin film magnetic head according to claim 11, wherein [the above-mentioned] <u>said</u> light source emits light [of] <u>having</u> a wavelength of 266 nm.

- 14. (amended) Apparatus for measuring dimensions and alignment of [the] <u>a</u> thin film magnetic head according to claim 11, wherein [the above-emitted] <u>said</u> light source emits light [of] <u>having</u> a wavelength of 213 nm.
- 15. (amended) Apparatus for measuring dimensions and alignment of [the] <u>a</u> thin film magnetic head according to claim 11, wherein [the above-mentioned] <u>said</u> geometrical information [that the above-mentioned] <u>provided by said</u> geometrical information detecting means [detects] includes <u>at least one of dimensions</u> of the element [or] <u>and</u> alignment error of the element.
- 16. (amended) Apparatus for measuring dimensions and alignment of [the] a thin film magnetic head according to claim 11, wherein [the above-mentioned] said magnetoresistance effect element and [the above-mentioned] said resistance detector element for monitoring the lapping process, both of which are formed on the above-mentioned substrate, are covered with end face protection films.
- 17. (amended) Apparatus for measuring dimensions and alignment of [the] \underline{a} film magnetic head, comprising:
 - a light source;

4

illuminating means for illuminating a pattern of the thin film magnetic head formed on a substrate with <u>illuminating</u> light emitted from said light source;

interfering means for forming interference light by making [reflected] <u>illuminating</u> light <u>reflected</u> from [the above-mentioned] <u>said</u> substrate [illuminated with said illuminating means] interfere with a reference light;

image [picking] pick up means for obtaining an image
signal by picking up an image generated by [the
above-mentioned] said interference light [which is] formed by
said interfering means; and

measuring means for measuring dimensions and alignment of [the above-mentioned] <u>said</u> thin film magnetic head from [the above-mentioned] <u>said</u> image signal which is obtained by said image [picking] <u>pick</u> up means.

- 18. (amended) Apparatus for measuring dimensions and alignment of [the] <u>a</u> thin film magnetic head according to claim 17, wherein [the above-mentioned] <u>said</u> light source emits light [of] <u>having</u> a wavelength [in the] <u>of</u> 300 nm or less[, preferably of a wavelength in 200 nm].
- 19. (amended) Apparatus for measuring dimensions and alignment of [the] <u>a</u> thin film magnetic head according to claim 17, wherein [the above-mentioned] <u>said</u> measuring means detects geometrical information of a magnetoresistance effect element of the [above-mentioned] thin film magnetic head and a resistance detector element for monitoring [the] <u>a</u> lapping

process and measures dimensions and alignment of the
[above-mentioned] thin film magnetic head from the detected
geometrical information.

Please add the following new claim:

--20. Method of measuring dimensions and alignment of a thin film magnetic head according to claim 1, wherein the illuminating light has a wavelength of 200 nm.--